

## EAST Search History

| Ref # | Hits   | Search Query   | DBs                           | Default Operator | Plurals | Time Stamp       |
|-------|--------|--|-------------------------------|------------------|---------|------------------|
| L1    | 196218 | (spin adj bulb spin adj bubble or ((read\$3 or reproduc\$3) near2 (element\$1 or device\$1)) or mr or DOMR or mre or magneto adj2 (resistiv\$3 or resistance\$1) or magnetoresist\$5 or amr or magnetic\$4 adj2 (resistiv\$3 or resistance\$1) or SVMR or TuMR\$1 or CMR\$1 or GMR\$1 or spin adj2 valve\$1 or svmr\$1 or tjmr\$1 or tmj\$1 or tmr\$1 or mram\$1 or magnetic adj2 (memories or memory) or magnetic adj random adj access adj memor\$3 or DSV or TJM or macro adj magnetoresist\$5 or macromagnetoresist\$5 or piggyback or ((composite or combination or merged) adj4 head\$1)) or g11b005/39.ipc. or g11b005/33.ipc. or g11b005/127.ipc.  | FPRS;<br>EPO; JPO;<br>DERWENT | ADJ              | OFF     | 2006/11/20 09:03 |
| L2    | 211    | instack or in adj stack  | FPRS;<br>EPO; JPO;<br>DERWENT | ADJ              | OFF     | 2006/11/20 09:05 |
| L3    | 5      | 1 and 2  | FPRS;<br>EPO; JPO;<br>DERWENT | ADJ              | OFF     | 2006/11/20 09:04 |
| L4    | 64598  | (spin adj bulb or spin adj bubble or ((read\$3 or reproduc\$3) near2 (element or device\$1)) or mr or DOMR or mre or magneto adj2 (resistiv\$3 or resistance\$1) or magnetoresist\$5 or amr or magnetic\$4 adj2 (resistiv\$3 or resistance\$1) or SVMR or TuMR\$1 or CMR\$1 or GMR\$1 or spin adj2 valve\$1 or svmr\$1 or tjmr\$1 or tmj\$1 or tmr\$1 or mram\$1 or magnetic adj2 memor\$3 or magnetic adj random adj access adj memor\$3 or DSV or TJM or MTJ or macro adj magnetoresist\$5 or macromagnetoresist\$5 or piggyback or ((composite or combination or merged) adj4 head\$1)).ti,ab,clm. or "360/113" or 360/313-327.33.ccls. or 338/32\$2.ccls. or 324/207.21.ccls. or 324/252.ccls. or 365/171.ccls. or 365/173.ccls. or 428/811-811.5.ccls. or 148/108.ccls. | US-PGPUB;<br>USPAT            | ADJ              | ON      | 2006/11/20 09:05 |
| L5    | 3226   | instack or in adj stack  | US-PGPUB;<br>USPAT            | ADJ              | ON      | 2006/11/20 09:06 |

## EAST Search History

|     |         |  |                               |     |    |                  |
|-----|---------|--|-------------------------------|-----|----|------------------|
| L6  | 93      | 4 and 5  | US-PGPUB;<br>USPAT            | ADJ | ON | 2006/11/20 09:06 |
| L7  | 71      | @ad<="20040314" and 6  | US-PGPUB;<br>USPAT            | ADJ | ON | 2006/11/20 10:35 |
| L8  | 152591  | Ferripin\$6 or ferri adj pin\$6 or ruthenium or Ru or ferrimagnetic\$5 or ferri adj2 magnetic\$5 or antiparallel or anti adj parallel or ((antiferromagnetic or AFM or anti adj ferromagnetic\$5 or exchange) adj2 coupling\$1) or APC or AAF or SyAF or SAF or synthetic\$4 adj2 (antiferro or antiferromagnet\$5 or anti adj ferromagnet\$5 or coupling) or artificial adj2 (antiferro or anti adj ferromagnet\$5 or antiferromagnet\$5) or MSSV or SSV or AP1 or AP2 or APC1 or APC2 or AFC or ((reference or keeper) near2 layer\$1) | US-PGPUB;<br>USPAT            | ADJ | ON | 2006/11/20 10:32 |
| L9  | 39      | 7 and 8  | US-PGPUB;<br>USPAT            | ADJ | ON | 2006/11/20 09:52 |
| L10 | 87      | CoPtCr or Co adj Pt adj Cr or Co-Pt-Cr   | EPO; JPO;<br>DERWENT          | ADJ | ON | 2006/11/20 10:34 |
| L11 | 1081839 | Ferripin\$6 or ferri adj pin\$6 or ruthenium or Ru or ferrimagnetic\$5 or ferri adj2 magnetic\$5 or antiparallel or anti adj parallel or ((antiferromagnetic or AFM or anti adj ferromagnetic\$5 or exchange) adj2 coupling\$1) or APC or AAF or SyAF or SAF or synthetic\$4 adj2 (antiferro or antiferromagnet\$5 or anti adj ferromagnet\$5 or coupling) or artificial adj2 (antiferro or anti adj ferromagnet\$5 or antiferromagnet\$5) or MSSV or SSV or AP1 or AP2 or APC1 or APC2 or AFC or ((reference or keeper) near2 layer\$1) | FPRS;<br>EPO; JPO;<br>DERWENT | ADJ | ON | 2006/11/20 10:33 |
| L12 | 10      | 10 and 11  | FPRS;<br>EPO; JPO;<br>DERWENT | ADJ | ON | 2006/11/20 10:33 |

## EAST Search History

|     |    |   |                    |     |    |                  |
|-----|----|---|--------------------|-----|----|------------------|
| L13 | 78 | (CoPtCr or Co adj Pt adj Cr or Co-Pt-Cr) with ( Ferripin\$6 or ferri adj pin\$6 or ruthenium or Ru or ferrimagnetic\$5 or ferri adj2 magnetic\$5 or antiparallel or anti adj parallel or ((antiferromagnetic or AFM or anti adj ferromagnetic\$5 or exchange) adj2 coupling\$1) or APC or AAF or SyAF or SAF or synthetic\$4 adj2 (antiferro or antiferromagnet\$5 or anti adj ferromagnet\$5 or coupling) or artificial adj2 (antiferro or anti adj ferromagnet\$5 or antiferromagnet\$5) or MSSV or SSV or AP1 or AP2 or APC1 or APC2 or AFC or ((reference or keeper) near2 layer\$1)) | US-PGPUB;<br>USPAT | ADJ | ON | 2006/11/20 10:34 |
| L14 | 50 | @ad<="20040314" and 13  | US-PGPUB;<br>USPAT | ADJ | ON | 2006/11/20 10:35 |